

# Coliform Bacteria and Drinking Water

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Water systems are required to deliver safe and reliable drinking water to their customers 24 hours a day, 365 days a year. However, if the water supply becomes contaminated with disease-causing bacteria, viruses or protozoa, many people can become seriously ill. Fortunately, many steps are taken to ensure the public is provided with safe drinking water. One of these steps is to test water for coliform bacteria.

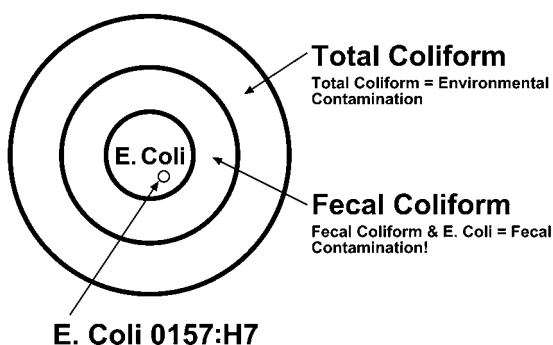
## What are coliform bacteria?

Coliform bacteria are organisms that are present in the feces of all warm-blooded animals and humans. Many of the organisms that can contaminate water supplies and cause disease also come from feces. Testing drinking water for all these organisms would be very complex, time-consuming and expensive. However, it is relatively quick and easy to test water for the presence of coliform bacteria, which is the best way to tell if drinking water is contaminated.

## Types of coliform bacteria

The term “coliform bacteria” refers to a large collection of many kinds of bacteria. There are three groups of coliform that are used as measures of drinking water quality: total coliform, fecal coliform, and *Escherichia coli* (*E. coli*).

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**Total coliform:** a group of bacteria present in feces of all warm-blooded animals and humans. They can also sometimes grow in soil, lakes or rivers.

**Fecal coliform:** a sub-group of total coliforms, which are able to grow well at body temperature. Fecal coliforms are more likely to be from fecal contamination.

***E. coli*:** a sub-group of fecal coliform bacteria, which are almost always from fecal contamination.

***E. coli* 0157:H7:** a specific species of *E. coli*, which has been responsible for waterborne and food-borne disease outbreaks.

**A note about *E. coli*:** A number of *E. coli* outbreaks have occurred which have received much media coverage. Most of these outbreaks were related to food contamination and were caused by a specific strain of *E. coli* known as *E. coli O157:H7*. When a drinking water sample is reported as “*E. coli* present” it does not mean that this specific strain is present. However, this does indicate that fecal contamination IS present and that the source of contamination needs to be identified and corrected. When water is treated with a disinfectant or boiled, all forms of *E. coli*, including *O157:H7*, are destroyed.

## **What happens if coliform is found in my water?**

Finding coliform bacteria in the drinking water is a signal that your water system might be contaminated. If only total coliform bacteria are found, further investigation of your water system is necessary to make certain disease-causing organisms are not present. Usually more water samples will be taken. If fecal coliforms or *E. coli* are found in drinking water, then it is more likely that disease-causing organisms could be present. If fecal coliform or *E. coli* are found, you will probably be advised to boil water for 3-5 minutes before drinking it, or to purchase bottled water. More sampling and other investigations will be carried out to find and eliminate any possible sources of contamination.

### **What is a water distribution system?**

A water distribution system consists of pipes that deliver water to households and businesses. When present in a distribution system, coliform bacteria tend to cluster and are not evenly dispersed. Clusters of bacteria can break up and migrate to other parts of the distribution system. This explains why two samples taken a few minutes apart can have very different results: one sample might have coliform bacteria while the other does not.

## **For more information:**

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